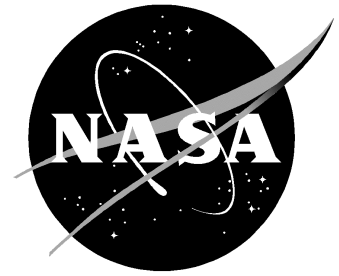


NewsRelease



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First External Experiment on ISS to Be Attached During Spacewalk MISSE Exposes Materials to Harsh Space Environment

The only way to test how materials will perform in space is to test them in space. Laboratories can only simulate one or two space environmental factors at a time.

When Shuttle Mission STS-105 lifted off from the Kennedy Space Center on August 10, it carried the MISSE payload. The Materials International Space Station Experiment consists of two "suitcases" full of materials that will undergo a one-year exposure test in space. The cases, called Passive Experiment Containers (PECs), will be clamped to the exterior of the International Space Station by astronauts Daniel T. Barry and Patrick G. Forrester during a spacewalk planned midway into the scheduled 11-day mission.

MISSE deployment during the mission's first spacewalk is scheduled for Thursday, August 16. The MISSE installation should take place at approximately 3:00 EDT.

NASA Langley Research Center's Newsroom will be open from 2:00 to 4:30 p.m. EDT with live images of the EVA. A MISSE principal investigator will be available for interviews. Look for a Public Affairs Office representative in the NASA front gate parking lot on Commander Shepard Blvd. to receive an entry badge.

Space is an extremely hazardous vacuum filled with lethal radiation, storms of micrometeoroids, extreme variations of temperature, and all manner of man-made debris. Any one or a combination of these can damage or even destroy unshielded satellites and other spacecraft.

Approximately 1,500 samples will be tested during the year-long project. The samples include ultra-light membranes, composites, ceramics, polymers, coatings and radiation

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shielding. In addition, components such as switches, solar cells, sensors, and mirrors will be evaluated for durability and survivability. Seeds, plant specimens and bacteria, furnished by students at the Wright Patterson Air Force Research Laboratory, are also being flown in specially-designed containers.

A similar experiment, the Long Duration Exposure Facility (LDEF, spent 69 months in low-Earth orbit before being retrieved in 1990. Researchers learned much from that experiment and began to develop new materials that could withstand the hostile space environment.

Another materials experiment flew on the Mir space station in 1996-97 as part of the Mir Environmental Effects Payload (MEEP). The current project will test materials developed as a result of the LDEF and MEEP programs.

After the exposure time of one-year, Mission Specialists will seal the Passive Experiment Containers, remove them from the Space Station and bring them home on the Shuttle for examination and study.

NASA's Langley Research Center in Hampton, Virginia, leads the MISSE project and is working closely with other NASA Centers, the Department of Defense, and the Boeing Corporation.

For more information on MISSE, please check the Internet at: <http://misse1.larc.nasa.gov>

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